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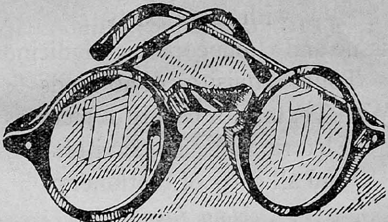

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The Scholar

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Is Nationalism Unbrotherly?

BY DUNCAN GREENLEES, M. A. *(Oxon)*

When you talk of Nationalism, you mean, "My country and myself first." Through Nationalism you cannot go to that human world unity...........Where there is Nationalism, there must be war; and as long as nations exist, war is inevitable.. ....To talk of Brotherhood and Nationalism at the same time, I call that hypocrisy.

—*Krishnaji*, 1933.

Swadeshi is the only doctrine consistent with the law of humility and love. It is arrogance to think of launching out to serve the whole (world), when I am hardly able to serve even my own family. My patriotism is both exclusive and inclusive. It is exclusive in the sense that in all humility I confine my attention to the land of my birth, but it is inclusive in the sense that my service is not of a competitive or antagonistic nature...........Patriotism based on hatred " killeth ", but patriotism based on love " giveth life ".

—*Gandhiji.*

THE scene is near the famous banyan tree at Adyar. Upon the dais sits an immaculate young man with earnest face and quiet manner. His startling words arouse little more than passing interest in the crowd that sits around him. Reporters of the Nationalist Press write every word he utters on this topic. Their Editors, careless of his real meaning, rejoice because of the seeming attack on the Theosophical ideals whereon he was brought up by Dr. Besant.

The deep voice goes quietly on, tearing down the foundations of society it has taken men a myriad years to build. Few seem to realise what he is saying. Those who believe in his message sit awed, with eyes and mouth agape as though to drink in the divinity of his presence. Those who are still a trifle sceptical sit back

easily to enjoy the fun. They doubt if one man can destroy the labours of humanity; they no longer take him quite seriously, this World Teacher who has, nobly, wandered from the path chalked out for him. After all, they think, he never stays long enough in any one place to change very much. A comet never changed the orbit of the world; and Krishnamurti seems very like a comet, swishing from land to land with a tiny train of satellites.

The scene changes. We are in the sweaty city of Madras in a stuffy hall packed with Christian missionaries, men used to labour in the heart of the very poor. A little man, who is indeed a Teacher of the World, is sitting there in shawl and loincloth, talking of Swadeshi to these foreigners and their Indian converts.

His words have power, because he has lived them, every one of them, in the sincerity which is the very soul of him. It is a voice whose single word millions will walk for miles on dark nights to hear. He is a man among men, and gives the fruit of his own life, the essence of many years of real service. Gandhiji does not sit in armchairs, in the luxury of the rich; he travels third, and is not ashamed to walk, beside the poorest of the poor.

Where lies the Truth, between these two? Is Nationalism a snare and hindrance to mankind?

It is so easy on a platform to rail at patriotism, with high words about the World State that is to be, to ridicule the highest ideal the common man has yet discovered. But will it help men on towards the higher, to have the lower ideal torn away?

Let us pause, before we take Krishnamurti's words as an excuse for our own selfish neglect of the Nation's service. What is this Nationalism he so utterly condemns?

Man long ago began with family loyalties, the parents fighting for their young against the world. For ages that went on, and then horizons widened. Little tribes were formed; loyalty embraced the village, then the city, and the district. Kings came. War spread and grew. Rivalries tore mankind.........Centuries, millennia, passed. Out of district states painfully arose the Nation. Ambitious kings created empires that vanished with themselves. Their successors built more firmly, and dynasties arose that reigned for centuries. A wider patriotism began to dawn. Men dreamed of an empire of the world. Fierce wars raged, and still menace humanity.

We have come to the present day. True internationalism is yet in the future; the leaders of men still dream of conquest, of paramountcy, of imperial responsibilities. Japan thirsts for China and world markets; Germany for revenge; the former Allies to

maintain their own control of wealth. What of the masses? They are hardly yet grown out of the *first* stage, that of seeking food and favours for their own households alone. The rulers of the world have kept them down to that, with their selfish monopoly of the riches of the world.

Yet here and there is the seed of future union, of the true World State, to which our yearnings tend. The believers are very few, as yet, and have no power in the field of politics. Fascists, Communists, and World Capitalists compete for rulership, with ruthless tyrannies on one another. The only check on selfish individualism for the ordinary man has been, still is, the ideal of service to the community, the Nation.

While we talk airily of world union, the peasants of Behar are plunged by flood and earthquake into famine. It is true that millions are starving in China, as Krishnamurti said. Millions are also starving here in India. What are we going to do about it? Shall we ignore the hungry at our doors, because there are many others whom we cannot see? Those indeed are men, like ourselves, part of our future World State,—but so are also these. Shall we feed them only with philosophies, with prophecies of the good time a-coming by and by?

To talk of Internationalism *before* we have passed through national patriotisms, is like a child who chooses names for the sons he hopes to have. Let the child be a child and play, and truly learn the life of children, while he remains a child. If he is a real child, he will grow into a real man, and will be a worthy father. Then he may name his children as he will.

If we are content humbly to serve our own people, thinking of them as human beings, in proper time we shall find the way to give true service to the world at large. Let us live in the real present, not in an uncertain future, drugging ourselves with words.

And what kind of service is it to be? Are we to shut out others from our minds and, loving India, hate the British or the Japanese?

That is not true Nationalism. The Nationalist loves his own people, because they represent to him the wider human race; when he meets with "foreigners", he is glad, for they also are human beings, and he can learn new things from them.

One who has outgrown the selfish narrowness of his own interests, one whose heart has expanded to take in the welfare of three hundred millions, can have no room for hatred in his mind. The servant of hate is no Nationalist. He often hypocritically disguises himself as an Internationalist, while snatching for himself the luxuries of the world, unheeding of the suffering all

around him. He gives them words instead of bread, and names in place of service.

Nationalism, true Nationalism,—not that Western madness Krishnamurthi seems to have confused with it, because it has dared to steal a holy name,—is the very breath of Brotherhood. It is the giving of a brotherly helping hand to all within reach who are in trouble, and the searching for a plan that will better their conditions, set comfort in the place of want. True Nationalism takes a friendly interest in the welfare of othar Nations, while devoted to the immediate helping of its own. It is the ideal of Theosophy, the ideal of our beloved Gandhiji.

It is true there is a selfishness that masquerades as Nationalism; such may well be condemned. But the masses of the world have yet known nothing higher, nothing purer and more unselfish, than the ideal of National service. To help the ordinary man, the man in the street, the real Teacher will take the highest ideal that he knows, use that and purify it, and so lead gradually onwards to a higher yet, that would at first repel.

The scaffolding must go some day, when the building is complete. Then will come the time for destruction, and it is the builder himself who will destroy what is no longer needed. He who impatiently tears down the scaffolding before that time, because in his mind he sees the vision of the building, complete as it shall some day be, is not inspired with wisdom.

India's National building is not yet complete. Even the lower ideal of Nationalism is too high for most of us as yet; we leave its calls unanswered, because they demand sacrifice from us; we are only too glad of an excuse for shirking the need of helping the community and so sink back into the petty earning for our own narrow families.

To destroy the scaffolding just now is no work for the lover of mankind; it is only worthy of an apostle of separative selfishness. Krishnamurti is not one of those, but his teaching can only have fruit in the creating of many such.

We must turn our ears away from such seductive arguments, and set our hands to building up the Indian Nation, one fifth of all mankind. That work is big enough for us. When India is free, and truely one, she will have much to say to her sister Nations on how they can build up a real World Unity.

Without hate or jealousy, with no narrow pride or selfishness, the Nation calls us to the truly brotherly service of our own immediate neighbour, for the eventual uplift of the whole. That is the only real path to the World State—not platitudes on shady platforms, but hard effort in the sun's cruel heat, where the masses toil in hunger, ground down to the daily fight for food.

Rural Uplift in India.

BY J. G. SHRIKHANDE, M. Sc., Ph. D. *(Lond.)*, A. I. C.

AGRICULTURE is, and for many years to come must remain, India's greatest industry and the foundation of the state. Agriculture gives occupation, directly or indirectly, to the vast majority of the Indian population. Almost everywhere in India it would appear that from times immemorial the people have lived in small villages, the mud houses of which are huddled together in more or less compact areas situated in the midst of fields which provide the means of livelihood to their occupants. The farm and the farmsteads which are so prominent a feature of rural life of western countries are entirely absent. The house of the farmer is in the village and his small holdings are scattered over the area attached to it. The life is thoroughly congested, unhygeinic, insanitary and devoid of the most common amenities of life. Since the healthy growth of a nation depends upon its industrial developement and expansion, and since agriculture is the chief industry of India and which in its turn depends on the healthy condition of the farmer, every effort should be made to improve the all-round condition of the farmer. Great opportunities thus exist for a betterment in the present village condition.

India is a great sub-continent, and one is easily struck by the apparent diversities it presents. It embraces varieties of climates and presents all classes of soil and cultivation. Although its population consists of various elements and represents various stages of social developement, yet there are certain economic and social conditions which are common to almost the whole of India. The land-holdings are small and scattered and the financial resources of the farmer almost insignificant. Illiteracy and superstition are deep-seated and the caste prejudice amongst the Hindus conspicuous.

The needs of the Indian farmer have hitherto been few. The village life so far has been self-contained and the village has had little contact with the out-side world. The development of communications and the cheapening of travelling facilities are bringing the villages into closer touch with the towns. This is tending to break down the isolation and self-sufficiency of the village, introducing new ideas and desires for better conditions of living.

Till now a fair advance has been made by Agricultural Departments in improving the technique of agricultural

operations and the economic condition of the farmer, but very little so far has been done towards the rural prosperity and the welfare of the farmer. Those who have ever gone into the villages and have seen the mode of living of the farmer shall not fail to say that the condition is appalling. Efforts are, therefore, being made and should be made to drag the farmer out of the present condition by systematic organization and vigorous propaganda. The most common and important items, besides many others, which need ready attention are medical relief, improvement of sanitation and spread of education.

The intimate relation between agriculture and public health is obvious. There is no direction in which the rural community needs more help than in the providing of medical relief and public health amenities. By providing a proper medical aid much of the economic wastage due to diseases and epidemics may be prevented. One way of helping towards the First-aid would be to train young men who volunteer themselves for such work in the art under authorised medical practitioners. Such young men, as far as possible, should be selected from those who have had some experience of village life. In the Bombay Presidency, a scheme has been inaugurated for the supply of medical relief in rural areas. Under this management a number of selected primary teachers are trained for about two and a half months in First-aid in Civil Hospitals. A still better plan would be to secure the services of the fresh medical officers who at any time will be better than such trained teachers, at least for some time if offered an honorarium. This would also offer these young men an opportunity of gaining experience which would be useful in their future career. Most of the villagers, from caste prejudice and lack of education, felt a sort of natural aversion to allopathic treatment. In such cases services of trained native physicians which could be secured cheap could be easily provided. Ayurvedic treatment is also no doubt considerably cheaper than the allopathic. All such unit organizations should be controlled by a central one. If no proper and systematic department for rural uplift like other departments under the Government be possible for reasons of finance, such medical organizations could be affiliated to the Red Cross Society or of a similar nature. A branch of the Red Cross Society is now invariably found in each of the big districts Progress in this direction must also depend on the awakening of the public conscience and the appreciation of the wastage of infant and maternal life resulting from the rigours of child birth. In the interests of the community as a whole, no less than of the rural population which forms such an overwhelming part of it, the urgency of the need of developing rural medical

relief and public health services to the utmost extent and speed, should be realised.

Rural uplift for promotion of the welfare and prosperity of the rural classes would be incomplete without the spread of education. So far as the general mass of the agricultural population is concerned, primary education and the attainment of literacy are the main considerations. While the proportion of children of school-going age attending primary schools is still disproportionately small, it is increasing with some rapidity. The spread of education amongst women is of great importance for the rural development of India. The value to the community of its women lies particularly in its effects upon the spread of its lasting literacy amongst the young. Great emphasis has been laid by Mr. Brayne, Deputy Commissioner of Gurgaon in the Punjab on the education of girls. He has once observed. " Train the women and the village will uplift itself ". The progressive adoption of the compulsory system is the only means by which the unwillingness of the parents to send their children to school may be overcome. The provision of the sufficiency of trained teachers and suitably equipped buildings must of course precede the employment of compulsory school attendance. If possible, female teachers should be provided for small children, for it is common experience that they are best qualified for such work.

Within recent years, the question of adult education has assumed some importance, notably in the Punjab, Bengal and to a lesser extent in Bombay. The success of this movement will to a large extent depend upon the interest taken by the co-operative societies and the association of public men, interested in rural development rather than direct Government agency. Adults engaged in farm operations during the day may be educated in night schools conducted by the Hitkarni Sabhas. Technical and agricultural institutes can also be instituted during the later stages of rural development on Soviet lines. It would also be of great interest and advantage if the organisers of the movement can canvass and secure the services of the young and fresh University graduates to participate in the movement. An effort in this direction will not be fruitless owing to the present state of unemployment in the educated class. The universities can help the cause by introducing "Rural Economics and Reconstruction " as one of the subjects in the course of studies. This will facilitate the production of men trained in the subject. The spread of education among the peasant can as well be conducted on the lines of Russia. There are peasant houses scattered throughout the Soviet Union. These houses, besides giving instructions in scientific farming, are carrying on a great deal of cultural social

and educational work. Among the peasant masses lectures on various agricultural and social topics are also held in these houses and groups are formed to do away with illiteracy.

Another method of spreading mass education is the "Wall" newspaper containing hand-written matter and drawings which should be posted in prominent places like the village shops, on river banks, and near wells and places like Octric posts and where carts are parked. The cinema films depicting local life and customs of people, industrial and technical matter, medical and scientific subjects should be shown in villages. An advance in this direction has already been made by the anti-tuberculosis, anti-malaria and anti-leprosy leagues. If radios could be introduced it would be an excellent medium of spreading education and new ideas. Health propaganda should be carried on by organising popular lectures and demonstrations, holding exhibitions, distributing handbills and posters and by instructions on birth control, hygeine of the house, infant feeding and the like.

The social work of the Servant of India Society is an interesting example of non-official effort. It is conducted by the Poona Seva Sadan Society which was established in 1910 as a movement to promote education of women. Its activities are manifold, including educational, medical and cultural, but the basic ideal is social service. Whilst its efforts have a bearing on the problems of rural environments special mention should be made of the facilities it offers for medical education amongst women. But the work of these societies are chiefly restricted to urban areas. The work done by such societies will have a great advantage over individual effort however sincere and devoted.

The work which is to be conducted for village uplift is thus of a very exacting and strenuous type. Besides it is of a specialised character like the work carried on by the co-operative, health and scouts departments. If compulsion is to be avoided and voluntary and popular basis is to be sought in favour of such nation-wide organisations they ought to remain voluntary and non-official in character. Government servants in these areas should be taken in an ex-officio capacity and should not be offered any important position or chairmanship of the association. The presence of Government servants is indeed very necessary, because there is always a certain type of work which could easily be accomplished through the help of the Government official. Reasons for not according responsible offices in the organisation to the officers are obvious. The Government officials are creatures of administration and may be tranferred at any moment from the place in question, thus dislocating the entire

organisation. Such cases have been aptly described by the Deputy Commissioners of Amraoti and Gurgaon.

Before launching upon the village uplift scheme on a nation-wide basis, it is essential first to make a survey of economic and social conditions and drawing up the list of existing organisations engaged in village improvement in different spheres of public activity as also a list of persons actively engaged in the pursuit. This should be done with a view to co-ordinating effort which would avoid duplication and rivalry. Such federation of bodies will also facilitate Government aid and recognition.

A successful start and functioning of such big undertakings as the village organisation scheme require appropriate funds, a right lead and vigorous propaganda. Funds can be collected by levying taxes on the money-making crops like cotton, oilseeds, sugarcane, jute and other plantation crops. Poultry and dairy products should also be taxed. These should be fixed and collected as they do in case of cotton per bale or cart-load. A certain proportion of the co-operative society benefits will make a good starting fund. The Government should contribute equally from the Provincial revenues. It is inconceivable at present to collect such taxes on crops because of the financial and trade depression. When normal conditions return the farmer himself will willingly contribute to the purse utilised for his own benefit. All these difficulties which appear insurmountable in the beginning easily melt before right lead. The matter will be much simplified as soon as Mahatma Gandhi enters the field, as declared by him at the last National Congress. A person who could collect a crore for the Tilak Swaraj Fund and a couple of lacs for the Harijan fund in such a short time should have no difficulty in collecting a decent sum to begin with. The present movement is for the uplift of the farmer upon whose well-being depends the healthy growth of the nation and the nation, it is hoped, will contribute to the best of its might. By the time the work gets going the country will have returned to its normal conditions and then there will be no dearth of funds. The rural uplift movement is essentially a movement of the masses, and their cause will be considerably advanced with the appearance of their leader on the stage.

The Economic Value of Calotropis Gigantea.

BY P. PADMANABHA IYER, B.A., M. Sc.

IN nature, the existence of a thing indicates the necessity for it. But perverse man thinks otherwise. The exuberance of a particular thing decreases its value and utility. Otherwise, it is not possible to account for the fact that, while coconut fibre, aloe fibre, sunn-hemp fibre and similar kinds of fibres are in the market, the fibre of the humble *Erukku* (Calotropis Gigantea) is not at all known.

Erukku is one of the commonest shrubs and grows in all kinds of soils. It is called in Tamil, *Erukkam*; in Malayalam, *Erukku*; in Kannadam, *Erukkam*, and in Telugu, *Jilledu*. No special care is needed to cultivate it, as nature has provided its seeds with wings by which they are dispersed by the wind. To grow this plant, no tilling, manuring or watering is required. It keeps fresh and vigorous even in the driest weather. It does not grow to any great height nor is it thorny. It is erect and smooth, with opposite, entire leaves and interpetiolar umbels of pretty rose and purple flowers.

The plant belongs to the natural order called *Asclepiadae*, which is of peculiar botanical interest on account of the marvellous structures of the essential organs of the flower. Cross-fertilisation in the *Erukku* plant is fascinating. The insects that help the fertilisation of the ovaries are caught in the structure called *Corona* and imprisioned there for two or three days till they fade away.

The Erukku fruit which is a follicle is about three to four inches long and two inches broad. It is concavo-convex. It bursts open when ripe and dry and ejects the seeds. The seeds are each about half-an-inch long and covered with silky hair, which enable them to fly and get dispersed.

The plant abounds in milky juice. It enters into the pharmacopoeia of Ayurvedic physicians. Cow's milk, the juice of *Erukku* and a little common salt are prescribed by them for tooth-ache. Inflammation caused by the penetration of thorns is reduced by the application of a few drops of this juice.

Erukku is a green manure plant *par excellence*. From the results of manurial experiments conducted on paddy with different

kinds of green leaves, oil-cakes, fish and artificial fertilisers at the Coimbatore Agricultural Station, it is seen that *Erukku* topped the list in yield and profit. An acre of paddy treated with four thousand pounds of *Erukku* leaves produced 3877 pounds of grain and 5306 pounds of straw. The net profit from an acre was Rs. 120. At the time the experiments in question were carried out the full force of the economic blizzard, which has since devastated agricultural India, had not been felt and the profit mentioned above had been calculated on the basis of the prices of paddy that prevailed then.

The process of getting fibre from the *Erukku* plant is not difficult. Only the bark has to be peeled off. It is full of fibre. No further labour is required than teasing it. The fibre is very valuable for textile purposes and can be put to the same use as flax or hemp.

India contains large tracts of waste land on which Calotropis Gigantea can conveniently be cultivated. Its cultivation practically requires no outlay and will bring in a decent profit. As far as I can see, it gives the strongest fibre. The *Erukku* fibre can stand soaking in water for a considerable length of time. There is a happy and harmonious combination of cheapness, strength and durability in this plant fibre, and it is really surprising that no one has tried to put it on the market and show its worth and usefulness.

Our Women Volunteers.

BY MARGARET E. COUSINS

NO one who attended the Bombay National Congress could have failed to see groups of women volunteers. Their rich orange-coloured sarees made them seem like flames in the white or neutral tints of the immense crowds. They were a distinctive feature of every function of this immensely successful session of the Indian National Congress. And it was their presence and their services as well as those of the men volunteers that caused all the arrangements to run so smoothly. Who would have thought ten years ago that India's womanhood would have come to the front as events have proved? Then women seemed undeveloped and weak. Now there is no duty, no danger, no publicity which they are not willing to face and in which they do not prove themselves thoroughly competent.

In the Congress Nagar these organge-robed ones had charge of entrances, checked all admission tickets, brought water to the women attending the meetings, found missing wives, husbands and children, did immeasurable services at the inquiry office, at the exhibition, at the various platforms and at the cottages of the leaders. Instead of shrinking shyness, and the inferiority complex of earlier days they showed an entirely praiseworthy absence of self-consciousness. The evidence to themselves that their power to serve was invaluable had shattered the false sense of inferiority and given them poise and self-reliance. I was told that two of their number on bicycles had led the first great procession. Two grown-up girl cyclists in such a glare of publicity is just typical of the speed and serviceableness with which Indian womanhood has taken its place in the vanguard of the national movement.

One might think that it was the leap forward of youth in this battalion of women volunteers, but such is far from the case. Quite a large proportion were women over thirty, women who have reared families, whose lives have been passed in the narrowness of four walls, who never thought they would move across wide spaces alone under the gaze of thousands of eyes. To such women the Swaraj movement has already brought individual Swaraj, a joyous expansion of life, something like a new birth, a measure of independence they have never dreamed possible.

I had the honour and happiness of addressing the whole women volunteer corps in their camp one night when their duty was over. The very plan of the camp architecture (made of

cadjan and casnarina trunks) was symbolic. It was circular in form enclosing a large open space used for drill, exercise and in its centre a flag post on which floated the national flag. About 200 women formed the corps but some were resident in the city. Over 130 were resident and thus had been in a regular disciplined training camp for over a fort-night. Of course, the conditions were hard. No soft, thick mattresses were allowed, all sleeping was done on the ground, and the little gravel stones had been a trial at first. The circle was divided into long dormitary sections, offices and a few small rooms for officers. The orange and green window and door curtains made the enclosure quite colourful in the bright electric light. All food had to be taken in the immense Delegates' dining hall. To plan the hours for the groups of women for bathing, food, various duties and relief shifts meant the drawing up of time-tables of a valuable kind. All these details of organisation were also taught to the group so that each of these women may some time be herself an organiser of such camps in the future. During the week preliminary to the Congress those who had enrolled were given instruction in First Aid, stave drill, crowd control and physical culture. Thus the training had a cultural value of its own. Good health is, *sine qua non* for such volunteers for the long hours of standing, the amount of walking, the Spartan conditions test the endurance of even the strongest.

During the hours of duty at various meetings the volunteers could pick up much instruction in politics, in the rules of procedure for conducting discussions and voting. I would press on the authorities for such Congress weeks the advisability of giving space at every meeting for such men and women volunteers not on duty to attend the sessions for educative purposes. The opportunity for giving those 1,000 young patriots the chance of learning their politics at first-hand from the leaders is too valuable to be lost. Russia has taught the world the value of such political indoctrination.

In such volunteer training camps all differences of caste, class, age, wealth or poverty, literacy or illiteracy are dissolved in the ideal of efficiency. Capacity rises to the surface like cream and respect for the powers of best service is given unstintedly without reference to all previous conventions of differentiation. So in the camp I found old women taking their orders from youngsters, poor women ranked as high officers over the head of such women, all castes and nationalities sleeping and eating together as one joint national family, daughters all of the one Mother, Bharatmata. It was a wonder to me that elderly ladies were willing to wear the novelty of the rather broad waist-belt of chocolate or green round their Sarees. It is quite an innovation in Indian

custom and not altogether beautiful for non-descript middleaged figures though slim girls carry it easily. But that is the quality of our national heroines—once they make a break with the old for patriotism's sake they stick at nothing. They swallow strange military salutes—belts and lathis as if they were conjurers. I salute them all with multiple Namaskarams.

I used to notice one middleaged lady in uniform on duty for long stretches in the Subjects Committee Pandal and wondered what she was like in ordinary life. Unexpectedly one night she was deputed to convey me to the city. I found that she owned a fine motor, was a wealthy widow, had begun to find life unsatisfying but now by this volunteer sphere of service had re-tasted 'la joie de vivre'. Every woman had similarly her own story of the happiness that the training and camp had brought them.

Undoubtedly one reason for the success of the women volunteers is the charming personality of their commander-in-chief, Miss Safia Somji. Like the General of the men volunteers, Mr. Meheherally, she is a Mahomedan. She has a sweet gentleness of manner with individuals, a harmonising power with groups, a rock-like steadiness in holding her own position and a masterly grip of detail. She is a pretty young woman, universally popular and deservedly so. She and Kamaladevi Chattopadhyaya, whose first lieutenant she was three years ago, are the ideal embodiment of Hindu-Muslim unity. Bombay has every reason to be proud of its voluntary national women police force—its Sainikas. May their example be followed all over India!

On Introductions.

BY A RETIRED M. R. A. S.

"GOOD wine needs no bush," is a very old saying. But it is one of those old-world conceptions that have given place to their converses and contraries. Bush is indispensable to wine now; nay it is taken to be the hall-mark of the best. "Big bush bespeaks the best," seems to be the modern successor of the ancient and time-worn adage. Things that are boosted and boomed are acccepted as superior of the kind. All things that come now into the country must carry credentials. And that is only to be true to the tradition of the West whose capricious mode of conduct called civilization now rules the world.

A man has to be presented to another by a common friend; a new-born child must have two godfathers to vouch for it; fiances must have their men and maids; and the traveller to the unknown realm stretching beyond the gulf of death must have his confessor to insinuate him into the presence of the All-Knowing and All-Merciful. In the absence of sponsors a man is a pariah. These pious proprieties of life have of late encroached on the worlds of Commerce, Industry, Literature and Science too.

A new product is launched into the market with adornments and subscriptions flaring on the sails; and a new book is ushered into the world with the fanfaronade of an inscription by a celebrity. The golden trumpet of the reputed introducer proclaims to the gaping world the peerless laurels of the offspring in advance of its adventure and summons the world to prepare promanades, pyrotechnics and triumphal arches for its voyage round the world. It must run round the world in prearranged greatness and prepared glory. The child that waddles in purple and gold, and bears the imprimatur of royalty may be an idiot. But who dares to speak of it in terms of disrespect! Idiocy amongst emperors is only a peculiarity of genius!

Introductions carry the day. Man does not seem to have outgrown his sheepish gregariousness and the consequent conduct of blindly leaping with the leader—may be into the abyss. He is mostly led by the nose. Few people keep their senses about them and perceive for themselves. In spite of all pretensions to self-determination we mostly swallow other people's prescriptions. Much rubbish is in consequence thrown into our hands by our critics and introducers who find it easy to palm off anything as

gold. And nothing but misplaced reverence for these godfathers makes one keep one's silence against it. Would to God, men keep their eyes open and refuse to allow these intermediaries to press camels down their gullets!

There is an old, perhaps trite, vernacular saying prevalent in India which says 'the value of a jewel varies with the worth of the wearer.' Our book-makers seem to have cleverly taken a good lesson from it. So they cast the burden of a book, especially the first one of an author, on the first man of the realm.

Introductions are the fashion of the day. Our authors and publishers appear to be determined not to permit us to see, or understand, or appreciate any offspring of the literary world in his naked simplicity or beauty. He must be dressed up and staged for the public eyes, and popular understanding and applause. What curious creatures these mortals or immortals are! Are they so deformed, demented, or beggared that they require to be draped in the glowing rhetoric or glossy poetics of a notable's eulogium to make their debut? By the way, it is said that the children of a big businessman hardly know their parent. They seldom see him. He is devoured by his uncharitable occupation. One begins to doubt if our writers even know their progeny; for are they not thoroughly transformed by the energies and endowments of their godfathers?

Our reviewers and introducers bolster up books and we consume them. The press dictates the taste of the people and determines the quality of the book. In the rush of business man has no time to pause and think for himself. Reading he does: but leaves thinking to another. Our judgment we hand over to another and we swallow what he calls sweet. The man who deserves to be told what is sweet and what is bitter that he might eat must certainly have his senses diseased. But are there not many amongst us who with no small pretensions to reason and discernment still gulp down or cast away things as sweet or bitter simply as they are told by some one? Democracy in the world of letters seems to follow the conduct of democracy in the world of politics where she suffers to be led or misled by the demagogue or dictator. And the surest passport to publicity and popularity to-day is an introduction by a man in the front. But what of this refined dressing and dishing? An introduction is the author's authority, the publisher's peculation, the introducer's eminence, and the public pest.

An introduction, however, adds much to a work. The introducer imports into the work of his protege all the qualities and qualifications that his fertile imagination weaves round his

favourite genius, and also perceives about the work a halo, which is only a reflection of his own intelligence, flashing on the work as he peruses it, and flies into ecstasies over the performance. Sometimes his sapient mind even exults in considerations which have no direct bearing on the work in hand. His comments are at no time much superior to the wily brahmin's ingenious interpretation of the word, RABHANA, unwittingly uttered by the ignoramus of a dressed up shepherd-boy. They are of the brood of his own imagination. And the modern man has to read and study the work of a new author through the golden goggles of the commentator. It is no compliment to human understanding to direct people to read a text in the light of a glass cast on it by a prepossessed mind. Constructive criticism is good and even necessary sometimes for the proper understanding of a difficult or significant text. Interpretation deflowers the meaning of the text. But the criticism of our forward-writers is not constructive but 'creative.' And 'creative' criticism is 'destructive' of the text and human understanding.

Common courtesy demands that a critic should have a word of goodwill and encouragement to the author; especially a young one. But he is not to play the sychophant. He must expound the merits of a work, but also point out in polite terms its shortcomings. Otherwise he does an injustice to the author and to the public, for he hinders the progress of the author and betrays the public confidence. But our presses are not much embarrassed by any cannons of criticism or strong sense of duty or even decency. The press is free, and it freely pours out its honey or vitriol according to its mood and choice. One may venture to oppose it, but will have no chance of entrance into the arena. The current coin of the common press-reviewer is either full-throated flattery or throttling inquisition. Before the days of Mathew Arnold English literary criticism had reached the sinister extreme of violent condemnation, and now the pendulum has swung to the other side of the amplitude and reached the extreme of indiscriminate adulation. 'Sinuous, easy, unpolemical' criticism is left to Arnolds, academies, and abstractions. Fair, circumspect, expository criticism turned with sympathy and discernment and expressed in terms easy, moderate and urbane is according to the book-maker's philosophy a matter more for commendation than for practice. To him reviews and notices of books are but advertisements that must flare and forward the sale of his volumes. Or is it that the overfed stomachs of our newspaper readers require strong wines to appetize them? Whatever that may be if the press-man does not follow the book-maker he shall have to pay for the books he labours to review. There is, of course, the consideration of space to come to the rescue of the press-man.

Press reviews and notices are no doubt midgets of criticims; but even midgets, it may be remembered, must not be amorphous masses of nauseating praise or unwholesome condemnation.

Reviews and notices of modern books are bad enough pestilence; but an introduction to a book is an unbearable infliction. It has not even the apologies available to reviews and notices. An introducer is by choice and avocation a confirmed, if not, confounded, enthusiast. He can pipe only one note and that is a psalm of glory. An introduction is blatant bluff; and bangs the door on all honest criticism. Do these forward-men think that all humanity beyond the pale of book-mongers is half-witted; or is it that their carelings require crutches to move about ?

"Judge not, that ye be not judged," said Jesus Christ. Our forbidding introductions also repeat the command in an undertone. As we open the book the happy forward-man draws nigh, and accosting us with a sly smile whispers in our ears : "Whoso differs from me is a simpleton and will soon become a scapegoat ." Who dares gainsay the great ! Under such auspices is it anything strange if imbeciles wear imperious airs and idiots dictate to intelligence and intuition ?

Introductions are the order of the day. They are in plenty. Are they cheap too ? It is they, however, that make authors nowadays. Formerly books were inscribed to great men to acknowledge and commemorate the assistance and encouragement they rendered to the struggling author in the preparation of the work. Such dedication did honour to the patron and invited the attention of the public to the work, leaving the merits of the performance to be judged by them. But to-day the practice is different. Dedication is less a mark of deference than of indifference. Great men evince their patronage of a work by introducing it with a full-throated song. And unless a great man sings a psalm to a new-comer his nobility seems to be at stake. Every author, perhaps, thinks it his duty to bring another into the society of inkslingers. And each writer has a neighbour or a next-friend, an acquaintance or an admirer handy for a favourite. And who would not welcome the good graces of the gods !

It should however, be gratifying to see that a sense of fraternity is growing amongst the children of the Muses. There is, of course, something common to these wayfares of the heights of Helicon and its suburbs. But what gives rise to these introductions is not, we apprehend, that they are people of the same soil, but that they are all M. R. A. S (Members of the Reciprocal Admiration Society.)

A curious phenomenon that occurs in this realm of forward-men is noteworthy. One seldom finds an introducer bringing one

of his own kindred. Perhaps it speaks poorly of one's attainments and sympathies to do so ; or it may be that something like the electrical law of attractions prevails in the fold of the R. A. S. which is a wilderness of confounding allurements. It certainly flatters one's vanity to think of being called upon to introduce one of a different class of workers of his performance. It magnifies one's self, and enlarges the field of one's life. So we have one great man in generous pride proclaiming the glory of a piece of work which is entirely foreign to him and his sphere of life. The politician introducing the prophet, the lawyer introducing the poet and his work, the poet introducing the priest and his life-story, the philosopher introducing the story-spinner and his wild yarns, the administrator espousing the set up of archeological fossils, the artist introducing the agriculturist and his performance, and the musician introducing the metallurgist and his make sare not uncommon in our midst. And who knows what other quaint associations may not spring up in this society !

Judges are advised to approach a case with an open mind. But the minds of lesser mortals have to be opened and adjusted before they hear the case. They are not to judge, but only to take other people's judgments. They are, therefore, prepared by the preface of a patron to study the book. A reader must start with the prediliction created by the adulation of the introducer. Otherwise how can he understand the book, or appreciate its value ? Democracy of the intellect has given place to the autocracy of the R. A. S. !

The best boomed is now therefore the best bloom. But human understanding is not dead. She may have been asleep and is slowly opening her eyes. So beware ! Let the next titular Raja who enters the realm with this kind of thunder and boom and standard of glory beware of our formidable array of freelances, fire-spitters, line-shockers, and heaven-splitters. They will accost him as he deserves, shatter his guns, tear his ensign to shreds, and make rags of his robes. So -- !

The Conquest of Indriyas.

A Puranic Story.

BY P. R. NARAYANA IYER,

AMIDST the learned assembly of holy sages sat Vyasa, the compiler of the Puranas and the analyser of the Vedas, on a cushion of *Kusa* grass. A bundle of *cadjan* leaves and the iron rod of writing lay before him. Each stanza before it was committed to writing underwent a critical analysis in the mind of the holy compiler. The stanza was recited before the assembly whose approval or disapproval was to decide the fate of the stanza. No stanza was committed to writing before the same was approved as faultless. When the stanza carrying the idea that "the Indriyas are difficult to subdue and that Yogis and sages of great Thapasya often failed to resist the temptations of Indriyas and fell a miserable prey to such temptations" was recited by Vyasa for approval, it created some discussion in the assembly. An old venerable sage came forward to say that the idea contained in the stanza recited was far from the truth and that it should be rectified. Vyasa did not press that what he stated was the truth. On the other hand, he meekly submitted to the proposed correction and the *cadjan* leaf was passed over to the old sage. The following correction was effected. "Though it is true that Indriyas cannot be subdued by ordinary mortals, the statement does not apply to sages who have spent many years in concentration and holy Thapasya."

The sun was sinking in the western horizon. It was time for Sandyavandanam. The sages retired to meditate and pray. The hours of the evening advanced and a heavy rain threatened the still hours of the night. Thunder and flashes of lightning stirred the calmness of the atmosphere. Wind charioted the downpour of rain in its speedy wings. The leafy huts of the hermits shook under the force of the wind and rain. Cold pinched the poorly-clad sages. In the middle hours of that hoary night a feeble cry was heard from the wilderness. The voice appeared to be that of a woman in distress and it proceeded from the vicinity of the old sage who had corrected Vyasa.

"Holy sages," the voice said, "Protect me from this wind and rain. I am a poor woman turned out of the house by an enraged and jealous husband. Oh God, I have lost my way. I am dying of cold and hunger."

This pitiable cry awakened the sympathy of the old sage who opened the doors of his Ashram and walked in the direction of

the voice. He found a beautiful young damsel drenched to the skin struggling in the forest and trying to get shelter. The old sage took her to his Ashram, kindled fire to warm her and offered dried fruits and baked roots. Her enchanting beauty held itself out in bold relief illuminated by the blazing cinders. The sage was captivated. The bewitchery of her beauty was celestial and could not be resisted. The damsel began to talk in playful tones and invited the sage to sit by her side and enjoy the warmth of the fire.

"Pretty girl," said the sage, "you have suffered much in wind and rain. This is no place for fun and frivolity, mirth and enjoyment. The sacred abode of sages are not places to encourage feminine frivolity. Take rest in the adjoining room and at daybreak you can go home and be reconciled with your husband." "Venerable sage," continued the damsel, "I am young and timid by nature. I am afraid to sleep alone in this dark room. You are old and there can be no harm if you sleep in the same room with me."

This was a bait irresistable. The sage's mind wavered in indicision. His long Thapasya gained temporary mastery over the fluctuating mind. He managed to persuade the girl to sleep in the room and assured her that there could be nothing to be afraid of in the holy Ashrama. The damsel retired into the room and bolted the door.

Cupid is an all-powerful warrior whom none can vanquish. He aims his arrows against one and all, makes no distinction between peasant and prince. Saints are no exceptions to him. His flowery arrows pierce the boldest heart, rend it asunder and subdue the mortal and the immortal. The old sage, inspite of his age-long Thapasya, felt the prick of Cupid's darts and could not muster courage to withstand the fury of the attack. The beauty sleeping in the adjacent room became the focus of his meditation. He desired to know how the girl looked like when she was sleeping. He slyly unbolted the door and entered the forbidden apartment. Her heaving bosom, slim form, tender hands crossed across her voluptuous breast and the particular hour of the night appeared to invite him for an exhilarating embrace. No sooner had the old sage shared her bed than he fell into an irresistable soothing slumber.

The early hours of the morning proclaimed the musical notes of birds calling sleepers to wake up. Venus twinkled in the sky with rays of cooling illumination and notified the approach of dawn. The old sage dreaming of the fair girl and her ravishing beauty was awakened by force of habit. He looked for the beauty whose bed he had shared. She was no longer to be seen in the

room. In her place, to his utter bewilderment and astonishment she saw the bearded Vyasa, the compiler of Puranas and analyser of Vedic lore. His gleaming personality was shooting out rays of ineffable effulgence all around. Shame and repentance invaded the countenance of the old old sage who prostrated at the feet of Vyasa. With eyes diffusing waves of kindness and with voice modulated with accents of veneration, Vyasa lifted up the prostrating old sage and said:—

"My dear Rishi, fear not that you are polluted by the contact of feminine body. It was I who appeared before you in the form of that enchanting lady and, please excuse me, I did so to test the force of resistance which you may be able to present against the temptations of Indriyas. Old and venerable sage, you now know the feebleness of resistance you were able to command. May I know if you still uphold the opinion that prompted you to alter the stanza I recited ? "

"Vyasa, you are right" replied the old man," I am wrong. There is no use of my having had long Thapasya. Every syllable of the puranas compiled by you embodies the essence of truth unchangeable and immutable."

Now the old sage took the cadjan leaf and the pointed iron rod and restored the stanza to original form and magnanimity.

On Smoking.

BY E. S. VELAYUDHAN, B. A.

THE famous chemist Martin has sanely said that the degree of civilization of a country is proportional to the quantity of sulphuric acid—the key chemical—consumed; but the non-chemists think that the former is rather proportional to the quantity of smokes and liquors consumed. Now, man is so obsessed with the present day civilization that he does not even care to think at all about the necessity for the luxuries for which he spends a good lot, although he is placed in extreme economic embarassment. Ruskin thinks that one of the worst national curses of modern civilization is the habit of using tobacco. It is therefore, worth our while to attempt indicating the deleterious effect of tobacco both on the physical and intellectual capacities of humanity as a whole.

To have an idea of how much havoc the tobacco habit brings about, the study of the composition of tobacco is essential. "Tobacco contains a powerful narcotic poison, nicotine which resembles prussic acid in the rapidity of its action. In addition to nicotine it also contains small quantities of related substances, nicotellin, necotein, a comphoraceous substance termed nicotiannin said to give tobacco its characteristic flavour, and likewise a volatile oil developed during the process of preparation. On heating, pyrdine, nicolin, picolin, collidin, and other gases are formed, as well as carbolic acid, ammonia, marshgas, cyanogen, prussic acid, carbon monoxide and furfural.[1]

Having studied the composition of tobacco, the properties of its constituents deserve our attention. Pereira's "Materia Medica" at page 567 says that nicotine is particularly a heart poison. It acts also on the blood vessels and kidneys and gives rise to high blood pressure and hardening of the arteries. It produces first convulsions and then paralysis.

Dr. George Thomason[2] has said that the principal substance giving the odour of tobacco is collidin, an alkaloid as poisonous as nicotine. It is so highly poisonous that the twentieth part of a drop will quickly kill a frog; if a person breathes it for a few seconds, he experiences muscular feebleness and vertigo.

"The phenomena of vertigo, headache, and nausea in tobacco-users is due to the presence of prussic acid in it. The quantity of prussic acid varies with different kinds of tobacco. The black

1. "How to Live" Dr. Irving Fisher page 341.
2. Enemies of Health.

semi-liquid matter that is condensed in the interior of pipes, contains both prussic acid and nicotine in large quantities".[3]

The carbon monoxide formed by the incomplete oxidation of the carbonaceous matter contained in tobacco induces quicker respiration and more rapid beating of the heart, trembling and convulsions. It is an extremely poisonous gas because of its affinity for the oxy-haemoglobin of the red blood cells to form carboxy-haemoglobin, thus preventing the blood cells from absorbing oxygen. A large quantity of it in the smoke will produce dilation of the pupils, cold sweat, cold skin, fainting and paralysis.[3]

Each cigaratee when smoked developes a certain amount of furfural. Dr. Kress, Vice-President of the Anti-Cigarette League, U. S. A., says that "furfural seems specially to injure nerve and brain tissue. It is responsible for the nervous tremor found in cigarette users. In course of time, it produces intellectual and moral degeneracy among the young. To the presence of this poison and to the inhalation of the smoke, we are forced to attribute largely the evils of cigarette".[3]

The burning of ordinary cigarette paper always produces acrolein, one of the most terrible drugs in its effects on the human body. Thomas A. Edison, the great inventor, has said that "this is what makes the smoke so irritating. I believe that it often makes boys insane. We sometimes develop acrolein in this laboratory in our experiments with glycerine. One whiff of it from the oven, drove one of my assistants out of the building. I can hardly exaggerate the dangerous nature of acrolein, and yet that is what a boy is dealing with every time he uses an ordinary cigarette."[3]

Dr. Sims Wood-head, sometime Professor of Pathology in Cambride University says: "Cigarette smoking in the case of boys partially paralyses the nerve cells at the base of the brain, and this interferes with the breathing and heart action. It also interferes with the function of the eye, of the heart, and of the kidneys. Tobacco smoking interferes with the development of the boys."[4] And Dr. Kaviraj Sreejukta Bhushan Roy of the Calcutta University in his health book "Swastya Neeti" writes:— "The brain of the tobacco smoker becomes anemic, red circular spots appear on the stomach, the lungs are affected, the heart is weakened, and gorged with blood, yet it is unable to pump out the blood, and blood becomes very thin. As a result of being addicted to tobacco for a long time, the disease resisting power of the body is decreased, and dyspepsia, sore throat, heart trouble,

3. Enemies of Health.

consumption, paralysis nervous debility, &c. are liable to result."[4]

The consumption of tobacco has now increased by leaps and bounds, and there is a strong plea for swadeshi smokes, for, even Dr. Acharya P. C. Ray, in his address on "Swarajya as the Handmaid of Swadeshi" distressingly remarks that it is a 'shocking sight to me to find our educated young hopefuls going about in '*Bideshi clothes*' and dressed in European style—veritable '*jackdaws*' in borrowed feathers smoking 'Bideshi Cigarattes'! For the time being we must be prepared to use indegenous stuff even if they are of somewhat inferior quality.[5] Though the cause of Swadesism will be promoted a little by the use of swadeshi smokes, when its evil effects on the humanity as a whole is taken into consideration, the little benefit has to be ignored.

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4. Enemies of health.——
5. Chemistry student, page 102.

Twilight.

BY F. H. ALDHOUSE

THERE is a moment before sunrise, and another after sunset when there is a hush of expectancy over all things. They await the miracle of dawn and the miracle of dusk. There is almost a belief that a cosmic bell will sound as the sacring-bell rings when a priest elevates the Host. The change from twilight to dawn and from the glow of the setting sun to the sombre shades of evening is a very solemn thing. I think that when Milton wrote:

" Myriads of spiritual creatures walk the earth "

his experience was acquired at dawn or dusk. He felt as others have that the change of light and darkness brings a moment of spiritual vision...........

I was passing over St. Dominic's Bridge back to my home at Dunore after school one spring evening. The sun had just set and some of the birds at Ball's Grove were singing their evensong before going to their roosts. A few carts were going back from Drogheda where they had been leaving farm produce, but there was no one on the bridge that I noticed till the boy suddenly appeared, apparently from nowhere and spoke; wishing me good evening.

" Where on earth did you spring from ? " I said rather irritably, " Why I thought you were a ghost for a moment."

" Oh," he answered " It must have been the shadow from the Dominican Church and the glare of the sunset that hid me. It's a glorious evening. The sky to the west is a wonder. Every shade of gold and of red is over to the West, the Boyne looks as if it were on fire."

I looked at the many coloured clouds, and the hills and river all redeemed by its glow, and forgetting my momentary annoyance I and the boy had a conversation which continued till I came to our gate.

He would not come in though I pressed him, telling me he was in a hurry. After that I often met the boy. He never joined me if anyone else was with me and I could never persuade him to enter my home.

I had a great liking for him and yet there was a something .... ? Really I don't know what to call it...........perhaps the rather uncanny way he first made himself my companion, but I had an odd kind of shock sometimes when he joined me.

"I wish you would tell me more about yourself Pierci," I said. "Where do you live? What do you do all day? I never see you till the sun is gone down and then you always make off in a few minutes. Who are your father and mother?"

The boy appeared a little embarrassed by my curiosity but after a moment's hesitation he said "Please Terry, don't be offended if I can't tell you what you want to know just now. I stop not far from here, but my parents...........well they died some time ago. As to my surname it is O'Hanlon. As to what I do..........." he hesitated.

"Perhaps," I laughed, "You are one of the descendants of Count O'Hanlon who fought against Oliver Cromwell who caught him and hanged him over this bridge. I don't know if he had a family. The only relative I ever heard he had was his young brother whom they hanged at the same time. He was about your age I remember........... Well, what's wrong with you?"

I might well ask, for Pierci had suddenly grown quite pale and clutched at his throat.

"Oh nothing," he said rather lamely. "My throat is a little sore, I think I'll leave you now."

The O'Hanlon's were members of our family. I was sorry I had touched what might be a painful memory and after a moment's reflection, turned to express my regrets to Pierci who had left me.

I ran back to the turn, it was only a few steps and looked but my companion was gone. There were only the flat fields between the Ramparts' (as we call them) walk and the Boyne on one side, and the high wall to the fields of Ball's Grove on the other. Where could he have got to? I called but got no answer. I did not see Pierci for some days after that and was careful to say nothing more to him about what had happened for fear he might take offence and come no more. And I had really great pleasure in his company and liking for himself.

Then one day in winter the accident happened. They had been repairing the bridge which is as you know very old and I trod on a loose board and went head first into the chilling waters of the Boyne. I seemed to sink down, down a vast distance into the dark river. I cannot swim, and as I rose again and caught a glimpse of the setting sun I realised it was my last sight of the beauty of evening in this world.

It was at that moment I saw Pierci coming to my aid. He caught me by the shoulders and though he held me firmly and guided me to shore I was amazed to find that I could not touch

him, for I tried to hold his hand and caught nothing but the empty air. As we reached land he let me go.

"There is no use pretending any more, Terry," he said. "You know now I am what people call a ghost. I was Count O'Hanlon's young brother who was hanged over that bridge. They threw me in the river when all was over. I've been earth bound ever since. I was only fifteen at that time, but those who as the songs say 'rode with Count O'Hanlon' had to forget they were boys and kill Puritans like men. I've tried to get acquainted with boys, that I might live the boyhood I gave up to be a fighter. Most found me out and ran screeching from me, some would not make friends for they felt there was something weird about me. Because you loved me you helped me greatly; and now you have given me the chance of helping you and thereby winning Peace. If you had not loved me I could not have done anything but watch you drown. It is our affection that has united us so that I could out of the Beyond come to your rescue; by it I have rescued myself too. Bless you, dear brother, pray for poor Pierci O'Hanlon who will always pray for you."

He kissed my forehead and as a twilight shadow dissolves, so he vanished.

What is time? A dream, an hallucination. The years had not separated me from one whom I shall always miss and always remember with gratitude and affection.

Ora pro anima Pierci O'Hanlon. Dona ei requiem, Domine.

Science and Religion.

BY Y. V. S. IYER, L. T. C. (*Hons.*)

IT might, with some show of truth, be said that modern science has no natural relation to religion, that to make out any such relationship is artificial and that therefore the above title is misleading. But any foundation for such a statement is removed when we give attention to the all-inclusive character of the main function of true science.

The function of science is to observe, explain, classify and interpret the phenomena of Nature in its most comprehensive sense regarding it as inclusive of the domain of Mind, as well as the domain of Matter. Science has, quite properly, to deal with everything that concerns human life, either in the past or in the present, whether we call it sentious or spiritual. Its investigation, then, is by no means complete, its discoveries or theories cannot be looked upon as conclusive or final. What man has thought and done, endured and endeavoured in bygone age is truly evidence of development of life, is of as great value in building up an intelligible and reasonable system of universal truth as are the fossil remains of the flora and fauna of other epochs which science regards as of first importance. Books of this class are considered to be records of creation. They mark the birth of the intellectual life of man. Scientifically, they rank among the science of civilization which it is the delight of the archeologist and the historian to examine and explain : and in this sense, those who belong to the past are veritable 'footprints of the Creator'. All human history is religious and all religion is quite appropriately an object of interest and study to the consistent naturalist.

The religious records of nations bear evidence of the efforts made by sages to understand the environment of which they were conscious and to harmonise their thoughts and conduct with its requirements. They too rank among the phenomena of Nature. A nation's religious records express the word of God, the laws of Nature, the method of creation in the same sense as the flowers of the field, the birds of the air and the riches of the rocks.

If the function of Science is to interpret the divine revelation which Nature makes that function cannot be faithfully discharged until the scientific method is applied to man's religious faith, the evidences of the development of his moral life. It is not only the right but the duty of the scientific investigator to enter the

religious sphere and seek a reasonable and natural interpretation of the facts and phenomena it contains. A system of religious doctrine cannot be built on mere assumptions. We must begin with recognised facts and from these observe relationships, deduce the general laws and principles which they obviously yield. Science declares that God lives in the World and in human consciousness as an inspiring force. All Nature, in every period, is the medium of the revelation of life's divinity. In one organism, the revelation may be fuller and clearer than in the other, but in some measure they help and reveal as means of manifestation.

The more and more clearly as the world grows and knowledge is increased, do we discover

> Tongues in Trees,
> Sermons in stones, Books in the running brooks,
> And good in every thing,

as the great poet has put it. Just as fossils and other relics are indisputable evidences of the validity of Nature in the past, so the records of the religious faith of man in all times are equally indisputable proofs of the ceaseless operations of the same vital power in the highest domain of human consciousness. The form of a man's religion depends mostly, if not entirely, on his conceptions of God; and the same is true of any community of men. For, although every moral being, as a moral being, is possessed of religious instincts the form of its expressions will always be determined by the environment in which he stands. The particular conception of Deity to which the man or a nation becomes attached is the result of the religious instinct being exercised under circumstances of a particular character. In a temperate climate and mountainous country, the Gods of the people who lived there would be quite different from the Gods of another people inhabiting a land of opposite natural characteristics. An inland nation that never saw the Sea would have no Ocean God, while those who had to guard against the encroaching tides and to battle with the winds and waves would inevitably worship him who ruled those elements according to his will.

As men advanced in civilization and had more and closer communication with each other, each community would add to its original religious ideas what seemed attractive or appropriate in those of its neighbours. But still, the primary notion particular to itself would usually be retained as the basis of its religious system. Every religious system would have as its central object one or more divine beings but the aspect under which deity was viewed by each would differ from all others and this differentiating idea of God would constitute the basis of the peculiar genius of each separate religion. This, so far as historical science

can inform us, seems to be the explanation of the origin of all the many forms of religious faith professed by the different peoples of the world.

Now, these many religions, like and yet unlike each other, could not have come into being all at once. They must have grown with the intellectual growth of the nations accepting them and must have become modified by the various experiences through which those nations passed. And yet, the germ of them all is the conception of a something superior to man, a conception native to every member of the human race. Here, we have the vital essence of spirit of all religions. In some form or other, they all reveal human nature, aspiring to a divine ideal which demands realisation. In each, the ideal is and must be differentially viewed, but there it is, in every one of them, dictating a supreme law obedience to which is the sum of duty. And just because, the essential character is the same in all, while the forms of its expressions are widely dissimilar, science rightly concludes that those religions must be classed among the products of that evolutionary law, principle or force which is at work in every sphere and in virtue of whose working, both the universe and the human life are what they are today.

This law, principle or force is merely the scientific equivalent for God. Science announces the same truth though in different terms. What has it found to be the supreme law of natural progress? First of all, it has proved beyond all dispute that universally considered, Nature, in its very essence, is evolutionary. Life implies irresistable, indefinable force to which we are wont to give a variety of titles that only cover our utter ignorance of it. The method of working which that force reveals, announces love to be the supreme law of creation and universal rightness to be its ultimate end. In the ordered harmonies of a universe of worlds, in the changes and chances of the earth on which we dwell, in all things, it contains great or small, science discovers that the law of individual existence is Obedience, Submission and Sacrifice.

In the words of Theodore Parkar, the end of religion and science is to unite man with God till he thinks God's thought which is Truth, feels God's feeling which is Love and wills God's will which is eternal right.

The Vidyarambha.

BY M. S. K.

THE Dasara festival concludes by the Vijayadasami day. On that day is celebrated by all Hindus, what is variously called the Saraswathy Puja, Ayudapuja, Pujayeduppu or Vidyarambha. The compound word Vidyarambha means literally introduction or initiation of the young to learning. But then, why is it that old and young alike observe the Vidyarambha year by year? Do the grown up and educated also require initiation every year? The meaning of this ceremonial function is well illustrated by a charming little story.

Auvvayar, the great devotee of Goddess Saraswathy (the fountain source of all knowledge according to Hindu ideas) entertained the delusion that she had acquired all knowledge by the grace of her beloved deity and that there was none to equal her in profundity of knowledge. With the ego and false pride born of such self-delusion, she was one day loitering about the banks of the river Saraswathy, when to her amazement she found her favourite deity herself, with a *grantha* on hand deeply immersed in studies.

Auvvayar exclaimed:—"Pray! Devi! Still reading! Have you anything more to study? Thine devotee, even Auvvayar, this humble self has by thine grace become master of all arts and all knowledge, where then is the need for thou to learn further?

The Goddess Saraswathy turned her eyes higher and thither, and from the huge mountains of sand that had piled themselves up on the river banks, picked up in her right hand a few particles and extending that hand towards Auvvayar replied: –Oh! devoted soul! *Vidyadhana* (wealth of learning) is as vast and immense and as numberless as the fragments of sands lying in heaps all about the river banks and I realise and I must say that I have become master of only as much learning as the few fragments of sand that I have been able to pick up from the endless mass that lie scattered all over here. The rest is all a sealed book to me.!"

Thus teaching a lesson to Auvvayar and humbling down her vanity the Goddess disappeared.

The morale of the story is clear and striking. It means that for the whole lifetime, initiation into newer and newer paths of knowledge is a desideratum, for the field of knowledge is limitless and the thirst or passion for the same is to continue unabated.

Ideals for the Young.

BY PAUL VERGHESE, B. A.

"His subject was the bore of all bores, Education
A subject without beginning, middle or end."

EDUCATION is an art, and like all arts it requires in the artist both knowledge and skill. He has to perceive his ends; to choose and practise means to reach them. Otherwise he would be a creature of instinct like the ant, and the artist, we need hardly say, is a man conscious of his proceedings. Education is the foundation of all civilization. It should help the efflorescence or growth of life and what was wrong in the world at the present day was that education had been turned away from its real, cultural and spiritual value to one merely for making a living. Until one is fairly a master of some one subject which he may engage for enjoyment, for activity, education is not complete. We educate highly that the man may have more power, that he may have many sources, that he may do better what he has to do and may not be dependent on one means of support or one set of conditions.

Educated intelligent men are intelligent labourers. An educated man will learn more speedily, work more successfully and attain a higher standard than the ignorant artisan.

Education is the foundation of the State and educated young men have an astounding influence on its development. They must take up the burden of aiding less favoured peoples not for glory or gain, but as an uncompromising duty without hope of appreciation or reward. They should be considerate to one another and see that the wheels of life turned smoothly and sweetly. Young men must enter life with a true democratic spirit with a ready sympathy for all classes of people and with a helpful attitude towards all problems of State and society. The work of any public institution of higher learning is a failure as long as its graduates fail to esteem the State's claim on them as citizens. The great principle of evolution is the struggle for life. The struggle for the life of others is also another equally important principle. Altruism—devotion to others—makes human character beautiful and noble.

Society is a mirror. Each one sees himself reflected in it, by which each attains self-consciousness and becomes a human being. Industries, commerce, science, literature, art—all these which make life worth living, spring from co-operation.

The ideal scholar is a man of rich thought and feeling. He is one who has realised much of his possibility and has come to a consciousness of universal truths. He has variety, breadth and definiteness of knowledge, and so he is able more wisely to play his role in the State. He is the conservator and transmitter of thought of the ages. From his acquaintance with the past he may expound the meaning of the present. By his own activity and orginality he may add to the store of wisdom and the progress of civilization. He is able to circumspect broadly the field of knowledge. He should judge wisely of events and be able to sift useless details from essential truths. Upon him rests the responsibility of having many talents committed to his charge, he must gain other talents.

But this educated power is not to be merely selffocused. In these days no man is granted to live an unproductive life. The world demands the best expression of every man's best ability. The development of his nature and enjoyment of his powers is every man's right. The educated man should be a man of action and influence. If he chooses literature, he must give mankind the effect of his deepest penetration. If he chooses science he enters a vast arena and the world expects of him some new contribution to knowledge or skilful application in using the forces of nature. "If he chooses teaching he holds his only valid commission from the wise men of all ages. He is a mediator between the whole world of intellectual and moral wisdom and the needs of the plastic mind, and he is in large degree responsible for the shape it assumes and its beauty and worth. Young minds will reflect the richness or poverty of the thought, feeling and life of the teacher."

In all the walks of life, in whichever field his knowledge rests, the educated man must use his trained powers for the honour of his calling. The world has special claims upon the learned professions. "This demand for unselfish public service from the educated has not merely an objective significance. A man's full growth is, in large measure, dependent upon the effective outward expression of his better self. Man finds his well-being in regard for the well-being of others."

The intelligence of the nation should guide the nation and any educated man who stands by and looks with reluctance or timidity on the struggle for the triumph of the best elements of society and the best principles deserves the reproof of every valiant Hotspur in the land.

I would have educated young men take a hand in every contest where order, justice and honesty are endangered ; I would

have them independently take a stand with whatever party or faction, at a given time, may represent the best cause. I would have them measure public service and public reward by the strict standard of equity; I would have them recognise the duty of active practical citizenship.

Man's ideal nature is his moral nature. Moral life is life consciously conducted in conformity with the laws by which man can live as a rational being and such a life demands for its realisation the education of all his powers bodily and mental.

The Scholar Science Corner.

BY B. H. IYER, M. Sc. (Bombay), A. I. I. Sc.

Cellulose and Civilization.

> "We hear it; we live in houses made of it; we record our news and literature upon it; we even take it into our systems with our food. What is it? The answer to this riddle is a material which has been responsible for epoch-making changes in the trend of human affairs throughout the long road up from savagery through barbarism and early civilization to the present time. Everyone is familiar with it, yet few know it. It is not only the most abundant material of the vegetable kingdom but it is also one of the most important materials on which man has relied throughout the development of civilization. We know it in the forms of cotton and of linen; of wood and of paper. We even know it as artificial silk. Yet reference to cellulose, which is the basic chemical substance common to all these materials, brings in a word which is familiar to few. On the other hand, this term cellulose is one destined to become gradually more and more familiar, at least to those who make any pretence of following modern trends in the arts and sciences".

With this preface, Dr. G. J. Esselen, Ph. D., begins his narration of the interesting story of cellulose in a paper entitled "Before Papyrus ..Beyond Rayon" (*Journal of the Franklin Institute, March 1934*).

Cellulose forms the fibrous skeletal frame work of the members of the vegetable kingdom. When the constituents like water, inorganic salts, organic matter like sugars, fats. resins, alkaloids and other substances are removed from the plant material the resulting residue is cellulose. Although the industrial application of cellulose dates from early times in the civilization of mankind a systematic working up of this material commenced only very recently. The chemical constitution of cellulose is yet a problem for research. Its empirical composition has been found to be $C_6H_{10}O_5$. The molecular weight—a datum which helps to assign the structure and composition of a chemical substance—for purified cotton cellulose as determined recently is 300,000. A knowledge of its chemical nature and the successful attempts to prepare various derivatives of the substance, have opened numerous new avenues of industry. The abundant natural supply with an assured possibility of replenishing when necessary, by cultivation, gives this material the foremost rank among the most useful raw products for industry. To get a ready conception of the nature of this material it will be advantageous to know that

the paper-like linings found inside the hollow of the adult bamboo plants constitute pure cellulose.

Civilization proper is generally considered to have begun with the development of a system of writing, perhaps ten-thousand years ago. In the commencement, writings were made on clay, stone and metal. The advent of papyrus came at a later stage. In modern times, cellulose, in the form of paper has become " the silent bearer of the written and the printed word ". How far the introduction of paper into the society has benefitted humanity need not be described here. The art of paper manufacture was known to the Chinese several hundred years before the Christian era. This art was introduced into Europe in about the 12th or the 13th century. It is said that in a battle between Chinese and Arabs fought at Samarkand, the latter defeated and captured the former. Among the captives were a few paper manufacturers from whom the Arabs learnt this art. Trade with Asia was responsible for the diffusion of the knowledge of paper making into Greece at about the end of the 11th century whence the Moors carried it into Spain in the middle of the 12th century. Later it gradually spread into Italy, Germany and France. Now paper is manufactured all over the world.

With the establishment of the paper industry in Europe coincides the time when Roger Bacon introduced the black gun powder to which he gave the name Philosopher's Egg. The power of the gun powder and the power of the written or printed words on paper have helped the progress of civilization remarkably Man has depended upon cellulose for many of his needs. To cite a few, in transportation, his earliest boats, his carts, his sledges and in his modern collapsible boats, deck coverings, tarpaulins and other tit-bits on the present day steamers, in motor car tyres and practically in everything useful cellulose is found in its native state.

Cellulose on treatment with nitric acid gives cellulose nitrate —a substance of great industrial importance. At various stages of nitration, different products are obtained which are used for different industries like celluloid, artificial leather, lacquer, smokeless gun powder and film industries. The plasticised cellulose is prepared into thin sheets which are used in the manufacture of laminated glass so very popular for its durability and strength. Another important compound of cellulose is cellulose ascetate. The vast amount of accumulated chemical knowledge about cellulose gave impetus to the study of some of nature's secret ways of conversion. For example the cellulose of the hay and grass on being passed through the living machinery of a sheep's system is converted into the vastly useful and widely

different product, wool. Similarly the cellulose of the mulberry leaf is converted into fine natural silk by the silk worms. To find out the secrets of these two processes was the problem of the investigators. Although nothing definite is known about both these processes, man may be credited with a partial success in that he has been able to produce synthetically fibres which more or less resemble silk at least in appearance if not in durability. The manufacture of artificial silk or the Rayon industry is the outcome of his labours.

Cellulose forms the raw material for the production of artificial silk. Two general processes are followed in this manufacture. In one, cellulose after suffering certain chemical changes emerges out in the final stage essentially in its native form but with improved lustre and softness. In the second process, even in the final stage cellulose remains as a derivative i. e., cellulose acetate. Both the aforesaid processes involve first the conversion of the cellulose into a soluble derivative, the solution of which is then forced through very fine orifices into a hardening medium which may be either a liquid or a gas, depending upon the character of the solvent.

Even beyond Rayon, cellulose is continuing to be a powerful aid in making possible developments which are changing the whole trend of civilization. The Cellophane and Sylphwrap transparent sheets used for wrapping boxes, cartons and other containers are all of cellulose.

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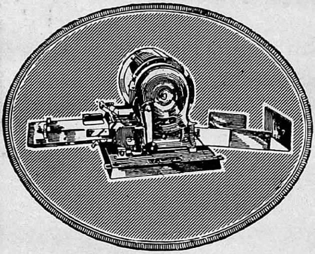

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